Graduate Awards

Computational and Experimental Materials Science

Grand Prize
Roxana Shabani (UCF)
“GRAPHENE-BASED BIMORPH MICROACTUATORS”

Second Prize
Xuan Sun (UF)
“ATOMISTIC SIMULATIONS OF THE NANOINDENTATION OF SEMICONDUCTOR AND GATE OXIDE INTERFACIAL SYSTEMS”

Third Prize
James Westover (UCF)
“AN AB INITIO STUDY OF HYDROGENATION INDUCED METALLIZATION OF SiC 001 (3X2)”

Honorable Mention
Daeha Joung (UCF)
“COULOMB BLOCKADE AND HOPPING CONDUCTION IN CHEMICALLY REDUCED GRAPHENE OXIDE SHEETS”

Chaoming Wang (UCF)
“THERMAL BIOSENSING OF MULTIPLE CANCER BIOMARKERES USING PHASE CHANGE NANOPARTICLES”

Muhammad R. Islam (UCF)
“SCHOTTKY DIODE VIA DIELECTROPHORETIC ASSEMBLY OF REDUCED GRAPHHEME OXIDE SHEETS BETWEEN DISSIMILAR METAL CONTACTS”

Energy-Related Materials

Grand Prize
Yi-Chung Wang (UF)
“DIRECT MAPPING SURFACE PLASMON COUPLING MODES IN A Ag SEMI-SHELL DIMER”

Second Prize
Weiran Cao (UF)
“FLEXIBLE POLYMER SOLAR CELLS WITH OXIDE/METAL/OXIDE TRILAYER AS TRANSPARENT ANODE”

Third Prize
John Mudrick (UF)
“OPEN-CIRCUIT VOLTAGE IN ZINC PHTHALOCYANINE-C60 ORGANIC PHOTOVOLTAIC CELLS”

Honorable Mention
Punya A. Basnayaka (USF)
“GRAPHENE/POLYPYRROLE NANOCOMPOSITE FOR SYMMETRIC ELECTROCHEMICAL SUPERCAPACITOR ELECTRODES”

Renjia Zhou (UF)
“5% EFFICIENT HYBRID ORGANIC-INORGANIC PHOTOVOLTAIC CELLS BASED ON BLENDS OF CDSE NANORODS AND CONJUGATED POLYMERS”
**Materials Characterization**

**Grand Prize**  
Kathryn E. O’Brien (UF)  
“ABSORPTION AND EMISSION OF PLASMONIC ANTENNA ARRAYS”

**Second Prize**  
David Summerlot (UCF)  
“HYDROGEN PEROXIDE SENSOR BASED ON NANOPOROUS GOLD ELECTRODES”

**Third Prize**  
Tanmay Bera (UCF)  
“MAKING POLYELECTROLYTE COATED LIQUID CRYSTAL DROPLETS SENSE THEIR SOLUTION ENVIRONMENT”

**Honorable Mention**  
Duy Le (UCF)  
“EFFECTIVE ELASTIC PROPERTIES OF MONOLAYER OF ANTHRACENE ON Cu(111) SURFACE”

Syed Islamuddin Shah (UCF)  
“CROSSOVER FROM CONCERTED MOTION TO PERIPHERY DIFFUSION FOR Cu CLUSTERS ON Cu(111): APPLICATION OF FINE GRID ON-LATTICE SLKMC”

Maral Aminpour (UCF)  
“PHYSISORPTION OF 1,4-DIAMINOBENZENE MOLECULE ON Au(111) SURFACE: THE ROLE OF VAN DER WAALS INTERACTION”

**Materials Processing**

**Grand Prize**  
Chien-Fong Lo (UF)  
“IMPROVEMENT OF OFF-STATE STRESS CRITICAL VOLTAGE BY USING Pt-GATED AlGaN/GaN HIGH ELECTRON MOBILITY TRANSISTORS”

**Second Prize**  
Farzad Behafarid (UCF)  
“NEW INSIGHT TO COARSENING PHENOMENON AND NANOPARTICLE-MEDIATED SURFACE PATTERNING: Pt/TiO₂(110)”

**Third Prize**  
Byung Hwan Chu (UF)  
“HYDROGEN DETECTION USING EPITAXIAL GRAPHENE COVERED WITH PLATINUM”

**Honorable Mention**  
Erica A. Douglas (UF)  
“TEMPERATURE DEPENDENT OFF-STATE DEGRADATION OF AlGaN/GaN HEMTs”

Lu Liu (UF)  
“EFFECT OF SOURCE FIELD PLATE ON THE CHARACTERISTICS OF OFF-STATE, STEP-STRESSED AlGaN/GaN HIGH ELECTRON MOBILITY TRANSISTORS”

Xiaotie Wang (UF)  
“LASER LIFT-OFF AlGaN/GaN HIGH ELECTRON MOBILITY TRANSISTOR CHIPS”
Undergraduate Awards

Grand Prize
Jeronimo Matos (UCF)
“ELECTRONIC PROPERTIES OF SIZE-SELECTED METAL NANOPARTICLES SUPPORTED ON OXIDES”

Second Prize
Samuel Roberts (UCF)
“STRUCTURE, VIBRATIONAL DYNAMICS AND THERMODYNAMICS OF SILVER THIN-FILMS ON Cu(100)”

Third Prize
Katherine McAlpine (NCF)
“REAL–TIME OPTICAL MONITORING OF PLASMONIC Ag PARTICLES OXIDATION IN SiO₂ THIN FILMS”

Honorable Mention
Kristy Kormondy (UCF)
“HIGH YIELD ASSEMBLY AND ELECTRON TRANSPORT INVESTIGATION OF SEMICONDUCTING-RICH LOCAL-GATED SINGLE-WALLED CARBON NANOTUBE FIELD EFFECT TRANSISTORS”

James Borrelli (UCF)